

Linear Regression single variable

What is Linear Regression?

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Linear Regression is a machine learning algorithm based on supervised learning.

It is a statistical method that is used for predictive analysis. Linear regression makes predictions for continuous/real or numeric variables such as cost, age, sales, temperature, product price, etc.

Two types of Linear Regression:



Real-life examples include:

1. **Agriculture** – Predicting the required amount of water and pesticides for crops.
2. **Home Price Prediction** – Estimating the price of a house based on its area.
3. **Study Time Analysis** – Determining how much time a person should spend on learning.

Linear Regression Real World Application



Data set:

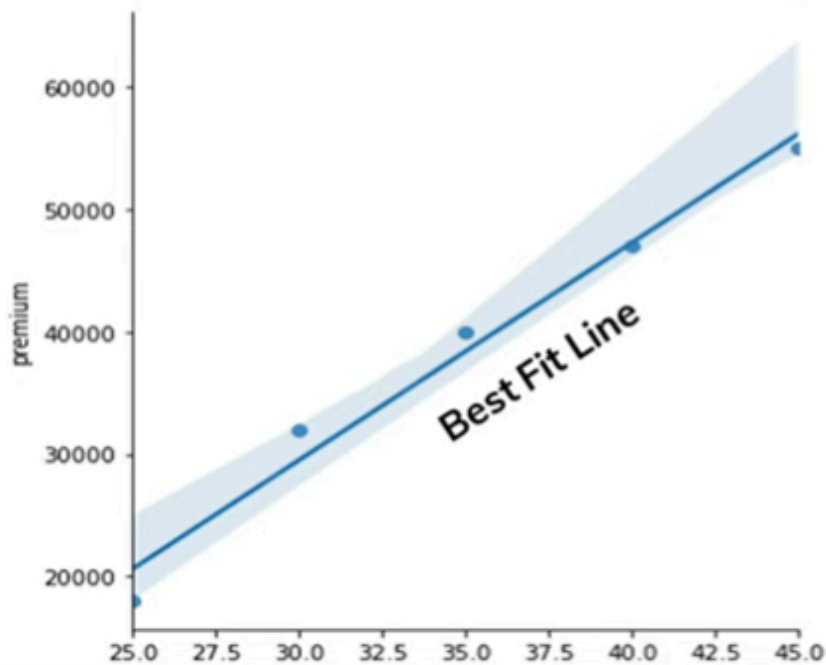
Term Insurance Dataset

Age	Premium
25	18000
30	32000
35	42000
40	47000
45	55000

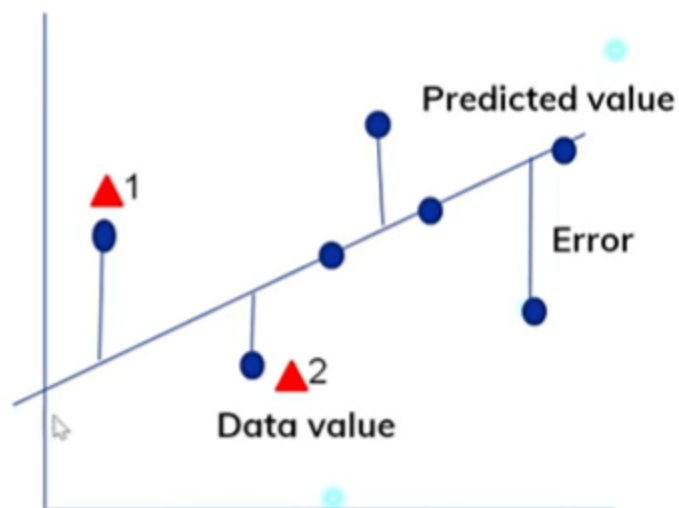
We'll find out the Premium whose age is 21 and 50

graph :

What is Best-Fit Line?



visualization natural graph:



Linear Equation:

Linear Equation:
 $y = mx + c$

where

y-dependent variable

x –independent variable

m-slope/gradient/coefficient

c-intercept

$\text{premium} = m * \text{age} + c$